

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
5 December 2002 (05.12.2002)

PCT

(10) International Publication Number
WO 02/096504 A3

(51) International Patent Classification⁷: **A61B 18/04**

(21) International Application Number: PCT/US02/16696

(22) International Filing Date: 28 May 2002 (28.05.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/294,135 29 May 2001 (29.05.2001) US
10/153,581 22 May 2002 (22.05.2002) US

(71) Applicant: **ETHICON ENDO-SURGERY, INC.**
[US/US]; 4545 Creek Road, Cincinnati, OH 45242 (US).

(72) Inventor: **MAKIN,, Inder, Raj., S.,**; 11388 Donwiddle Drive, Loveland, OH 45140 (US).

(74) Agents: **JOHNSON,, Philip, S.,** et al.; JOHNSON & JOHNSON, One Johnson & Johnson Plaza, New Brunswick, NJ 45242 (US).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW.

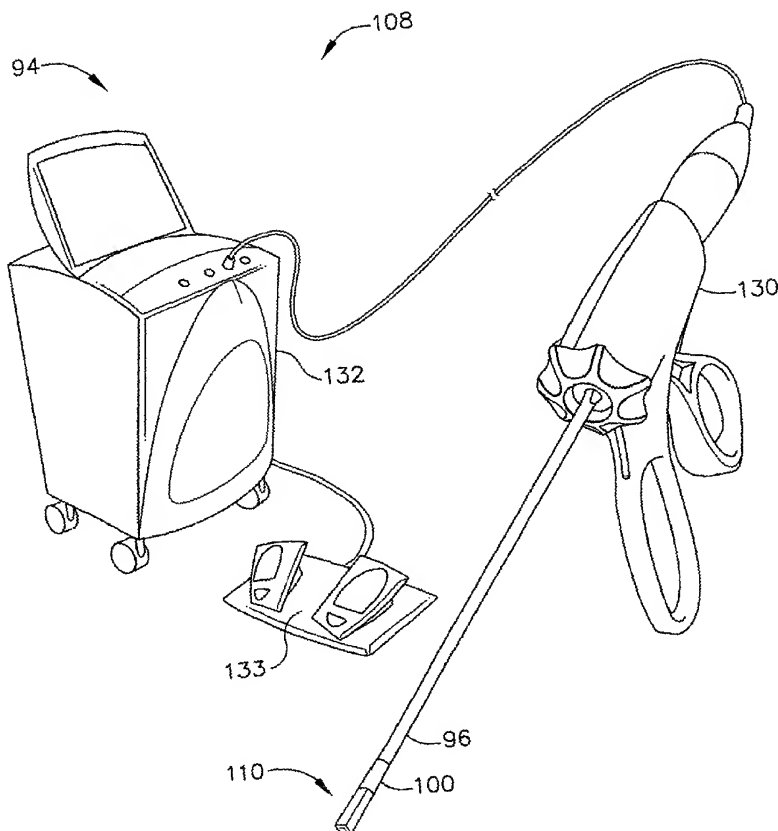
(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

[Continued on next page]

(54) Title: TREATMENT OF LUNG LESIONS USING ULTRASOUND



(57) Abstract: A method for ultrasound medical treatment of a patient. An end effector (110) is obtained having an ultrasound medical-treatment transducer assembly. The end effector (110) is inserted into the patient. The end effector is guided within the patient to a lung of the patient. A lesion is identified on or in the lung for medical treatment. The transducer assembly is positioned on or in the lesion. The lesion is medically treated with ultrasound using the transducer assembly. In one example, the ultrasound medical-treatment transducer assembly is an ultrasound imaging and medical-treatment transducer assembly, and the lesion is identified at least in part from ultrasound imaging using the transducer assembly.



WO 02/096504 A3



(88) Date of publication of the international search report:
6 November 2003

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US02/16696

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : A 61 B 18/04

US CL : 606/027

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 606/027, 28, 29, 30, 31; 600/439; 601/2-4

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,606,975 A (LIANG et al.) 04 March 1997 (04.03.1997), see entire document.	1-12

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T"

later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X"

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&"

document member of the same patent family

Date of the actual completion of the international search

11 August 2002 (11.08.2002)

Date of mailing of the international search report

04 APR 2003

Name and mailing address of the ISA/US

Commissioner of Patents and Trademarks

Box PCT

Washington, D.C. 20231

Facsimile No. (703)305-3230

Authorized officer

Linda C. Dvorak

Telephone No. (703) 308-0858